

4. The Examiner indicates the obligation of Applicants "...to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a)."

The following information is supplied to meet those requirements:

The material in claims 1, 2, 4, 6, 8, 9, and 11 was not commonly owned at the time a later invention was made and the invention date is December 14, 2001.

The material in claims 3, 5, 7, and 10 was commonly owned and the invention date is July 15, 2002.

#### 5. Claim Rejections - 35 USC Section 103

The Examiner rejects claims 1-11 under 35 USC 103(a), "...as being unpatentable over Gerling et al (US 4,326,114), in view of Chang et al (US 6,387,313) and Wear et al (US 4,640,020)."

Section 103(a) rejections have been examined in cases such as *Pentec, Inc. v. Graphic Controls Corp.*, 766 F.2d 309, 227 USPQ 766 (CAFC 1985); *In re Find*, 837 F.2d 1071, 5 USPQ2d 1596 (CAFC 1988); and *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (CAFC 1983), cert. denied, 469 US 851 (1984). These cases indicate that section 103 rejections must be determined by looking at the problem from the point of view of the inventor at the time of the invention and may not be based upon hindsight with the invention reconstructed based upon the a blueprint supplied by the applicant's claims. As indicated by the court in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543, 551 (CAFC 1985) there must be some objective reason for making a combination of prior art references other than hindsight obtained from the invention itself.

Under a variety of other cases including *In re Laskowski*, 871 F.2d 115, 10 USPQ2d 1297 (CAFC 1989), *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990), and *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (CAFC 1994) it is not enough simply to find the elements of an invention in the prior art and to postulate that such a combination *could* occur. There must be some teaching or indication in the prior art that such a combination is desirable. Any rejection of

claims is improper under section 103, if no teaching, suggestion, or incentive supporting the combination is found in the prior art. Also see MPEP Section 2143.01.

The Examiner indicates that Gerling discloses a loading section, a treatment section, and unloading section, a hopper, a plurality of microwave guides, and unloading means. "Therefore, Gerling shows every feature and structure as claimed except that it uses a hopper 72 with a screw-feed mechanism instead of the claimed reciprocating ram as the material feeding device."

Applicants, of course, disagree with the Examiner's assessment of Gerling. Applicants assert that the basic concept of Gerling is very different from that of the instant invention and that far from disclosing all of the features of the instant invention actually teaches far, far away from the instant invention. The instant invention includes a loading section, a treatment section, an unloading section, and a reciprocating ram to move the material through these sections. In all cases all of the sections are in communication with each other. That is, the material to be treated is introduced into the loading section and then is pushed through the subsequent treatment and unloading section by the ram. The material is, therefore, physically in contact with all sections and the ram and the various sections are the actual transport medium for the material. The concept and the operation of the device in Gerling is the exact opposite. In Gerling a microwave transparent tube is the only transport medium for the material (coffee beans) and the material never is in communication with or in physical contact with the so-called treatment section or unloading section.

Under MPEP Section 2141.02 "In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." Taken as a whole, the instant invention includes a loading section, a treatment section, and an unloading section which are the actual transport medium for the treated material. That is, there is no separate transport medium which is distinct from the physical sections. In Gerling, the transport medium is a tube and the material is never in physical contact with or in communication with the so-called treatment section. Taken as a whole, the instant invention is both treatment vessel and transport medium for the material. Taken as a whole, the invention in Gerling discloses a transport medium which is separate and distinct from the "treatment section."

Therefore, taking both inventions as a whole, Applicants assert that the differences between the instant invention and Gerling would not have been obvious to a person of ordinary skill in the field. A potential inventor standing in the shoes of the instant inventors at the time of the invention would invent a dryer which included some form of transport medium which was separate and distinct from the treatment section. That is, rather than the instant invention being obvious in light of Gerling, Gerling actually teaches strongly away from the instant invention.

Applicants further assert that the characterization of element 20 of Gerling as "...a treatment section 20 which is in communication with the loading section..." is incorrect in that the so-called treatment section is not in communication with the loading section. The so-called loading section is not in communication with the "treatment section" but is in communication only with the transport tube. The tube is further isolated from the rest of the apparatus by the addition of (col. 5, line 68) by insulation "...along its length within the oven by wrapping the same with a suitable insulating material which is microwave transparent; one specific example being Cer-blanket (trademark) sold by Johns Manville Company." If the section of the tube within the microwave oven were to be considered as the "treatment section," Applicants assert that the device of Gerling is even more different and unobvious; because, in Gerling, there would be no separate loading, treatment, and unloading section. All of the section would be embodied by the tube. Furthermore, the tube "treatment section" would be separate physically from the microwave carrying section and not in communication with that section. Applicants further assert that this is also an unobvious difference between Gerling and the instant invention.

Furthermore, the disclosure in Gerling indicates at several places that the turning and mixing of the coffee beans is accomplished by rotating the transport tube. Applicants assert that a person knowledgeable in the field would be lead by Gerling to invent or design a microwave dryer in which there is some means of stirring the material through rotation. The instant invention includes no elements which provide for stirring by rotation. Applicants assert that this is yet another indication that, rather than making the instant invention obvious in light of Gerling, Gerling actually teaches away from the instant invention.

The Examiner agrees that the reciprocating ram method of movement of material through the instant invention is not disclosed in Gerling, but that "Chang shows that it is well known in

the art to use a rotating screw conveyor of a reciprocating ram of a piston as the material feeding device for loading material into a container for treating (see Figure 9 and col. 1, lines 13-19).”

In addition to the above mentioned rules for evaluating Section 103 rejections, Applicants point out the following portions of MPEP Section 2143:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure.

First, Applicants assert that even using Chang as prior art in this case is inappropriate. In order to be considered as prior art for determining patentability under Section 103, the reference must be something which a person skilled in the art might ordinarily consider. The instant invention, Gerling and the other references cited all relate to microwave treatment or drying. Chang relate to “A combination rubber injection gate system (24) and method of injection molding rubber to produce desired flow patterns in the rubber is disclosed (Abstract).” It appears very unlikely to Applicants that a person knowledgeable in the field of microwave drying or treatment would even think of trying to apply technology from a totally unrelated field such a injection molding.

Second, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one or ordinary skill in the art, to modify the reference or to combine reference teachings. Chang deals with injection molding in which a viscous rubber compound may be forced through a mold to shape the rubber. In the instant invention, the material is not forced or pushed through anything. The reciprocation ram merely pushes the material through the loading, treatment, and unloading sections of the invention. The Examiner asserts on page 3 of the Office Action that “...a hopper 72 with a screw-fed mechanism (col. 6, lines 10-18) within said loading section which is capable of pushing the material form said loading section into said treatment section...” Applicants assert that this in not a correct analysis of the text in (col. 6, lines 10-18). This text is as follows:

Coffee beans are fed by a suitable metering device such as a feed speed control 70 to the inlet opening of a hopper 72 and are fed into the tube by a conventional screw-feed mechanism the speed of which is controlled by feed speed motor 70. The speed of rotation of the tube is controlled by feed speed motor 70. The speed of rotation of the tube is controlled by suitable tube speed motor 74 which is rotationally attached to a portion of the inlet end of the structure by cable or other flexible drive chain 76.

Applicants assert that this screw-feed mechanism only feeds material into the tube and is not capable of pushing the material from said loading section into said treatment section. A careful reading of the entire Gerling patent (see col. 4, lines 3-10) indicates that the motive power moving the coffee beans through the tube is not the screw-feed mechanism, but is gravity and the rotation of the tube. The screw-feed mechanism only feeds the material into the top of the tube and there is no indication that it ever acts to move the beans through the tube. Movement of the beans through the tube is powered by the tilt angle and rotation speed of the tube. Therefore, rather than teach toward some sort of rotating screw conveyor, ram, or piston of the type disclosed in Chang; Gerling teaches away from such an element.

Furthermore, there are indications in the specification of Gerling (see col. 2, line 45 et seq.) that a rotating screw conveyor, ram, or piston is undesirable. Gerling indicates that the very reason for the rotating tube in Gerling was because other methods of pushing coffee beans through a microwave dryer do not work. For example, continuous belt microwave equipment does not work for roasting coffee beans; "...due to lack of bean to bean contact..." Again, rather than teaching toward the type of material movement device disclosed in Chang, Gerling teaches away from the use of such a device.

Third, there must be a reasonable expectation of success in combining references. As pointed out above, Gerling indicates that such a combination would not be a success, but would be a failure. The very reason for the invention in Gerling was because of the failure of conventional dryers using the types of motive power disclosed in Chang. Because the screw-feed mechanism in Gerling does not provide motive power to the material, it is difficult to envision a manner in which a ram or piston could be incorporated into Gerling to successfully provide for the transport of the coffee beans through the microwave dryer. Pushing the beans through the rotating, inclined tube would defeat the basic purpose of Gerling and result in obvious failure of the device.

Both Gerling and Chang appear to teach away from any combination of the two. Furthermore, it appears that any reasonable combination of Chang and Gerling would result not in a reasonable expectation of success, but in a reasonable expectation of failure.

MPEP Section 2143.01 further indicates that “If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious.” As pointed out above, the basic principle of operation of Gerling is to have coffee beans move through a tube driven by gravity and the rotation of the tube. If Chang and Gerling were to be combined, that principle of operation would be radically changed. The material would not be moved through the tube by gravity and rotation, but by some form of forced push.

As pointed out above MPEP Section 2143.01 and cases cited indicate that “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” This is, of course, always a difficult point for either a patent examiner or a patent practitioner to make; because it is nearly always pretty subjective. However, Applicant asserts that, in this case, it is somewhat easier than on most occasions. The instant invention is intended to move material through a loading, treatment, and unloading section by using the motive power of a reciprocating ram. Chang discloses a screw conveyor, ram, or piston used to force rubber through a mold. Gerling discloses a gravity and rotation powered method of moving material through an inclined tube. There is no suggestion in the prior art that suggests the desirability of the combination. To paraphrase MPEP Section 2143.01, there is no teaching, suggestion, or motivation to combine Gerling and Chang found in either of the references or in the knowledge generally available to one of ordinary skill in the art. Therefore, rejection of these claims based upon a combination of Gerling and Chang should not be based upon obviousness.

The Examiner further uses a combination of Gerling and Wear (page 4) “...to modify Gerling to use a plurality of microwave guides each connected to a microwave generator for distributing microwave along the treatment section for better heating control, in view of the teaching of Wear.” Applicants assert that all of the above arguments relating to the combination

of Chang and Gerling also apply to the combination of Wear and Gerling. In particular, the indications in Gerling that an endless belt conveyor does not work for roasting coffee beans.

The Examiner further indicates at page 4 that "In regard to claims 3, 5, 6, 9 and 11, Gerling uses a tilted tube as "the treatment section may be tilted at an angle other than level to increase or decrease the flow rate of material through said treatment section" as claimed." Without repeating all the arguments made above, Applicants assert that the most of the same also apply here. Specifically, however, Applicants point out that in Gerling only the material transport tube is tilted to change the flow rate of material through the tube. The actual "oven" which contains the microwave emitters does not tilt and the tube rather than the "treatment section" tilts. In the instant invention, the treatment section is the transport medium and the material is in physical contact and communication with the material. In Gerling, only the tube tilts and the material in the tube is not in physical contact or communication with the part of the apparatus which includes the microwave emitters and enclosure. Applicants assert, therefore, that the inclinable treatment section of the instant invention is not obvious in light of Gerling.

The Examiner also indicates (page 4) that "In regard to claims 4, 9, and 10, Gerling also shows the use of a modular construction to permit scale up or scale down such that the length of the microwave dryer may be adjusted to suit production requirements (see col. 8, lines 47-51)." Applicants assert that this is incorrect to characterize this portion of Gerling as establishing a modular apparatus. The Merriam-Webster Dictionary (Merriam-Webster, Inc., 1997) defines "modular" as "constructed with standardized units." The instant invention is modular in that standardized treatment section units may be added either end to end or, even, stacked. The invention in Gerling is not modular and the section of the patent cited by the Examiner does not indicate a modular character. Gerling indicates that tube length may be varied or that microwave power may be increased or decreased, but there is nothing in Gerling to indicate that standardized units may be constructed and added or subtracted to vary the operation of the invention.

The Examiner also indicates (page 4) that "In regard to claims 2, 7, 8, 10 and 11, Wear also teaches the use of a purge gas passing over the product to carry away the vapor (see the abstract, last 5 lines and col. 11, 34 - col. 12, line 18)." Again, Applicants reassert, without repeating them, the above arguments that Wear must not be combined with Gerling to make the instant invention obvious. Gerling teaches away from a combination with Wear when it indicates

that the device in Wear does not work for the purpose for which the device in Gerling is intended.

Under MPEP Section "If an independent claim is nonobvious under 35 USC 103, then any claim depending therefrom is nonobvious." Claims 2-4 directly or indirectly "depend" from claim 1. If claim 1 were to be determined not to be obvious under the arguments made above, then claims 2-4 should not be considered obvious. Therefore, Applicant reasserts all of the above arguments made relating to claim 1, as they relate to claims 2-4; but will not repeat those arguments in detail here. Similarly, claims 5-11 (claims 7, 10 and 11 have been canceled) depend upon other claims and Applicant reasserts all of the above arguments relating to the patentability of claims 5-11.

### **Conclusion**

For all of the foregoing reasons, the applicant submits that the microwave dryer disclosed and claimed in the present application is not fairly taught by any of the references of record, taken either alone or in combination. Therefore, allowance of the present application is in order, and is requested.

Respectfully submitted;



Gene R. Woodle

Reg. No. 36,973

Tel. No. (605) 342-0853

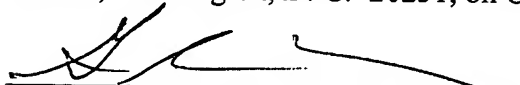
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Gene R. Woodle, Reg. No. 36,973

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